

**CLAIMS**

1. A microelectronic device used to produce light radiation, and which includes:

- 5                   - first electroluminescent means designed to produce first radiation of a certain luminance,
- first control means (130) designed to control the first electroluminescent means by means of a first current ( $i_{d1}$ ) with a level belonging to a first
- 10 range of levels,
- second electroluminescent means designed to produce second radiation of another luminance,
- second control means (140) designed to control the second electroluminescent means, by means
- 15 of a second current ( $i_{d2}$ ) with a level belonging to a second range of levels different from the first,
- with the light radiation having a total luminance which is a combination of said certain luminance and of said other luminance.

20                   2. A device according to claim 1, with at least several intensities of said first range of levels to which the first current belongs ( $i_{d1}$ ) being lower than the intensities of said second range of levels to

25 which the second current belongs ( $i_{d2}$ ).

                  3. A device according to one of claims 1 or 2, with the first and second control means each being equipped with switching means.

30                   4. A device according to claim 3, with the switching means of the first control means (130) and of

the second control means (140) being controlled by a given signal (vsel).

5        5. A device according to one of claims 3 or 4, with the switching means of the first control means (130) having at least one transistor switch (131).

10       6. A device according to one of claims 3 to 5, with the switching means of the second control means (140) having at least one other transistor switch (141).

15       7. A device according to one of claims 1 to 6, with the first and second control means (130,140) each having current modulating means.

20       8. A device according to claim 7, with the current modulating means of the first control means (130) including at least one current modulating transistor (132).

25       9. A device according to claim 8, with the means for modulating the second control means (140) including at least one other current modulating transistor (142).

30       10. A device according to claim 9, in which the first control means (130) include a current-modulating transistor (132) equipped with a channel of length  $L_1$  and width  $W_1$ , the second control means (140) include another current-modulating transistor (142) equipped with a channel of length  $L_2$  and width  $W_2$ , with the ratio  $W_2/L_2$  being greater than the ratio.

11. A device according to one of claims 7 to 10, with the current modulating means of the first control means (130) being controlled by a control signal (vdat1), and the current modulating means of the  
5 second control means (140) being controlled by another control signal (vdat2).

12. A device according to claim 11, with the control signal (vdat1) belonging to a certain range of  
10 voltages, and the other control signal (vdat2) belonging to another range of voltages that is different from said certain range of voltages.

13. A device according to claim 11 or 12,  
15 with the first control means also having at least one first capacitor (133) designed to retain the control signal (vdat1).

14. A device according to claim (13), with  
20 the second control means also having at least one second capacitor (143) designed to retain the other control signal (vdat2).

15. A device according to one of claims 1 to  
25 14, with the first and second electroluminescent means each including an organic photodiode (110,120).

16. A device according to one of claims 1 to  
30 15, in which the first electroluminescent means include a first photodiode, the second electroluminescent means include a second photodiode, with the first photodiode and the second photodiode having different emitting areas.

17. A device according to one of claims 1 to 16, with the first electroluminescent means and the second electroluminescent means being designed to function alternately or simultaneously.

5

18. A display or screen pixel that includes a microelectronic device according to one of claims 1 to 17.

10